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ABSTRACT of the Disclosure

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An efficient method for the microfabrication of electronic devices which have been adapted for the analyses of biologically significant analyte species is described. The techniques of the present invention allow for close control over the dimensional features of the various components and layers established on a suitable substrate. Such control extends to those parts of the devices which incorporate the biological components which enable these devices to function as biological sensors. The materials and methods disclosed herein thus provide an effective means for the mass production of uniform wholly microfabricated biosensors. Various embodiments of the devices themselves are described herein which are especially suited for real time analyses of biological samples in a clinical setting. In particular, the present invention describes assays which can be performed using certain ligand/ligand receptor-based biosensor embodiments. The present invention also discloses a novel method for the electrochemical detection of particular analyte species of biological and physiological significance using an substrate/label signal generating pair which produces a change in the concentration of electroactive species selected from the group consisting of dioxygen and hydrogen peroxide.

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